

## CHAPTER 16.00: CONTINUING EDUCATION REQUIREMENTS FOR ENGINEERS AND FIREMEN

### 16.01: Scope and Application

(1) Engineers and Firemen. In accordance with the provisions of M.G.L. c. 146, § 49, the Department shall promulgate regulations which shall require the renewal of such licenses every five years. All engineers and firemen licensed by the Commonwealth to operate boilers shall demonstrate completion of 30 hours of continuing education at or through an institution or organization approved by the Commissioner, in consultation with the Chief inspector, during each five-year period preceding each license renewal.

All engineers and firemen shall submit to the Department a certificate of completion from any Department approved institution or organization that they have completed 30 hours of continuing education, when renewing their engineer's or fireman's license. The 30 hours of continuing education must be completed before an engineer or fireman licensee can re-new their license, in an active status.

District Engineering Inspectors employed by the Department may use National Board on-line training courses or a training course acceptable to the National Board or training approved and/or provided by the Department in lieu of other Department approved institutions or organizations for the demonstration of the completion of their continuing education requirements.

Final certificate of completion shall be from one institution or organization for all hours required by statute. Approved organizations or institutions may provide credit to individuals who wish to transfer from one organization/institution to another in the middle of a course. The organization or institution may give credit to individuals provided they can provide verifiable proof that they participated in approved continuing education sessions.

Engineers and firemen must complete the full 30 hours of continuing education with the same institution or organization, whether or not said institution or organization may conduct the course at different locations. If an institution or organization cannot provide the full 30 hours to ensure license renewal, the engineer or fireman may transfer their continuing education training to another institution or organization provided they comply with 522 CMR 18.01.

An individual may transfer their continuing education training to another institution or organization. Upon transfer, the institution or organization which provided the continuing education shall provide the individual with a certificate evidencing the number of hours successfully completed by the individual at that institution. Other organizations or institutions shall accept this certificate as proof of the hours accumulated to date when issuing the final certificates of completion. Only final certificates of completions shall be accepted by the Department. Transfer certificates shall not be submitted to the Department.

All Massachusetts Engineer and Fireman licensees, upon completion of 30 hours of continuing education will receive from that institution or organization a uniform certificate, approved by the Commissioner, which they will retain and furnish the same to the Department, if so requested. They may also receive matter, approved by the Commissioner or their designee, which must be affixed to their license application upon renewal.

(2) Special-to-Have-Charge and Special-to-Operate Licenses. Individuals licensed to operate boilers under a special-to-have-charge, or special-to-operate license shall demonstrate completion of six hours of continuing education at or through an institution or organization approved by the Commissioner, in consultation with the Chief inspector, during each five year period preceding each license renewal.

#### 16.02: Definitions

Approved. Approved by the Commissioner of Public Safety, in consultation with the Chief for the Department of Public Safety, which comply with 522 CMR 18.00.

ASME. American Society of Mechanical Engineers.

Boiler. A closed pressure vessel in which water is heated, steam is generated, steam is superheated or any combination thereof, under pressure or vacuum for use externally to itself by the direct application of heat from the combustion of fuel, or from electricity or nuclear energy. The term "Boiler" shall include fired units for heating or vaporizing liquids other than water where these units are separate from processing systems and are complete within themselves. The term "Boiler" shall include unfired pressure vessels where steam is generated by a source of heat other than from the direct application of heat from the combustion of fuel, or from electricity or nuclear energy, (for example, clean steam generators that use steam or high temperature hot water as the energy source).

Commissioner. The Commissioner of Public Safety.

Department. The Department of Public Safety.

Gas Turbine. A device using combustion gasses directly in a turbine. The basic components of a gas turbine consist of a compressor, combustor and turbine. Fuel used in a gas turbine is natural gas, high quality fuel oil, synthetic gas or liquefied coal.

Instructor. Any person who instructs an approved continuing education program for engineers or firemen. The Instructor shall hold the same grade or greater of Massachusetts engineer or fireman license to the level of course they are instructing. An engineer or fireman will not be given credit for any programs or courses instructed by a person holding a lesser grade license, unless they are a guest speaker approved by the Instructor or Monitor. Instructors shall only be credited hours for the actual non-

redundant time that they have spent actively participating in the instruction of the program.

Monitor. An individual who oversees and has been appointed as the administrator for any approved continuing education program for engineers and firemen. It is not required that the monitor is physically present in each class. All Monitors must hold either a Massachusetts Engineer's or Fireman's license of equal or greater grade of the instructors of any approved program. Monitors shall only be credited hours for the actual non-redundant time that they have spent actively participating in the instruction or design of the program.

National Board. The National Board of Boiler and Pressure Vessel Inspectors.

NBIC. National Board Inspection Code 2011

Pressure Vessel. A vessel in which the pressure is obtained from an external source or by the application of heat from an indirect source or from a direct source, other than a vessel defined as a "Boiler" in this section.

Repair. The work necessary to restore pressure-retaining items to a safe and satisfactory operating condition pursuant to the NBIC.

#### 16.03: Requirements of Institutions or Organizations

The following provisions are required in order for any institution or organization to have their continuing education program considered for approval:

- (1) A copy of all curriculum, quizzes, training material, and certificate of completion to be used must be provided to the Department.
- (2) Continuing education shall not be divided into training increments of less than four hours, unless approved by the Commissioner.
- (3) Curriculum must contain the minimum topics and associated hours for those topics as listed in 520 CMR 16.04.
- (4) All courses must be monitored by a Massachusetts engineer of equal or greater grade of Massachusetts license, who will verify by their signature on the certificate of completion, that all those issued a certificate of completion have fully participated in the program for which they have been issued a certificate. Instructors shall only be credited hours for the actual non-redundant time that they have spent actively participating in the instruction of the program.
- (5) Method of Verification. Each program must provide a means to ensure certificate authenticity. Such means may include, but shall not be limited to:

- (a) Institution embossment of certificate;
- (b) Computer data transfer of program participants;
- (c) Signature verification; or
- (d) Numbering certificates.

(6) Certificates of Completion Must have the Following:

- (a) Name of participant;
- (b) Address of participant;
- (c) Massachusetts license grade and number of participant;
- (d) Name and address of the institution or organization providing the continuing education;
- (e) A legible signature of a Massachusetts engineer verifying participant has completed the hours as listed on the certificate;
- (f) The license number of the Massachusetts engineer endorsing the certificate;
- (g) Hours of continuing education that the participant has completed.

16.04: Curriculum

(1) Engineers and Firemen Requiring 30 Hours of Continuing Education. The following topics shall be covered in any approved curriculum with the recommended time spent each topic:

(a) M.G.L. c. 146 and 522 CMR 1.00 through 17.00, with particular attention to M.G.L. c. 146, §§ 46 through 56 and 522 CMR 2.00.

1. Topic Description: M. G. L. c. 146 as it pertains to the licensing of engineers and firemen; operation, maintenance, inspection and repair of boilers.

2. Purpose: To ensure that all engineers and firemen have a thorough knowledge of Massachusetts General Laws and regulations as it pertains to boilers and turbines.

3. Recommended Time Allotted: Four hours.

4. Recommended Instructional Methods: Lectures, discussion, and test.

5. Recommended Text: M.G.L. c. 146 and 522 CMR 1.00 through 17.00.

Recommended topics, or topics as approved by the Commissioner, may include but are not limited to the following:

(b) Steam Boiler Operation.

1. Topic Description: Safe boiler operation, including safe operation and maintenance practices of all appurtenances.

2. Purpose: To ensure that all engineers and firemen have a thorough knowledge of safe boiler operation and maintenance of all appurtenances.

3. Recommended Time Allotted: Eight hours.

4. Recommended Instructional Methods: Lectures, discussion and test.

5. Recommended Text:

a. Boiler Operators Guide-ISBN #0-07-036574-1

b. Stationary Engineering-ISBN #0-8269-4443-4

c. Powerplant Engineering-ISBN# 0-07-019106-9

d. ASME Code - Section VII, guidelines for the care of power boilers.

e. B & W "Steam" - ISBN#09634570-0-4.

(c) Steam Turbine Operation.

1. Topic Description: Safe turbine operation, including safe operation and maintenance practices of all appurtenances.
2. Purpose: To ensure that all engineers and firemen have a thorough knowledge of safe turbine operation and maintenance of all appurtenances.
3. Recommended Time Allotted: Eight hours.
4. Recommended Instructional Methods: Lectures, discussion and test.
5. Recommended Text:
  - a. Boiler Operators Guide-ISBN #0-07-036574-1
  - b. Stationary Engineering-ISBN #0-8269-4443-4
  - c. Powerplant Engineering-ISBN# 0-07-019106-9
  - d. B & W "Steam" - ISBN#09634570-0-4.

(d) NBIC/ ASME Code Section I, IV, B31.1 Section 6

1. Topic Description: The structure and review of the NBIC as well as the ASME Codes as it relates to boiler construction.
2. Purpose: To ensure that all engineers and firemen have a working knowledge of the NBIC and ASME Codes.
3. Recommended Time Allotted: Four hours.
4. Recommended Instructional Methods: Lectures, discussion and test.
5. Recommended Text:
  - a. National Board Inspection Code
  - b. ASME Code Section I, IV and B 31.1 Section 6

(e) Gas Turbines.

1. Topic Description: Gas turbine design and operation, including safe operation and maintenance practices of all appurtenances.
2. Purpose: To ensure all engineers and firemen have a working knowledge of gas turbine construction, operation, and maintenance, as they relate as an appurtenance of a boiler.
3. Recommended Time Allotted: Four hours.
4. Recommended Instructional Methods: Lectures, discussion and test.
5. Recommended Text: As determined by the Department

(2) Special-to-have-charge and Special-to-operate licenses Requiring Six Hours of Continuing Education. The following topic shall be covered in any approved curriculum with the recommended time spent on each topic:

(a) M.G.L. c. 146, 522 CMR 1.00 through 17.00, with particular attention to M.G.L. c. 146 §§ 46 through 56 and 522 CMR 2.00.

1. Topic Description: M.G.L. c. 146 as it pertains to the licensing of engineers and fireman; operation, maintenance, inspection and repair of boilers.
2. Purpose: To ensure that all engineers and fireman have a thorough knowledge of Massachusetts General Laws and regulations as it pertains to the license they hold.
3. Recommended Time Allotted: Two hours.
4. Recommended Instructional Methods: Lectures, discussion and test.
5. Recommended Text: M.G.L. c. 146 and 522 CMR 1.00 through 17.00.

(b) Steam Boiler Operation.

1. Topic Description: Safe boiler operation, including safe operation and maintenance practices of all appurtenances.

2. Purpose: To ensure that all engineers and fireman have a thorough knowledge of safe boiler operation and maintenance of all appurtenances.
3. Recommended Time Allotted: Four hours.
4. Recommended Instructional Methods: Lectures, discussion and test.
5. Recommended Text.
  - a. Boiler Operators Guide-ISBN #0-07-036574-1
  - b. Stationary Engineering-ISBN #0-8269-4443-4
  - c. ASME Code - Section VII, guidelines for the care of power boilers.
  - d. B & W "Steam" - ISBN#09634570-0-4.

#### 16.05: Miscellaneous Provisions

- (1) Any Massachusetts Engineer, Fireman or individual with a special-to-have-charge, or special-to-operate license who falsifies or misrepresents any certificate of completion shall be subject to a Department hearing which could result in the suspension or revocation of their Massachusetts Engineer, Fireman, or special-to-have-charge, or special-to-operate license.
- (2) Any Massachusetts Engineer, Fireman or individual with a special-to-have-charge, or special-to-operate license who is not presently employed in the Commonwealth, and cannot obtain the required continuing education necessary to renew their license may, upon written request at the time of renewal, request that their license be placed in inactive status until such time that the continuing education requirements are fulfilled. Individuals making such request must submit the renewal fee as required by statute at the time of request.
- (3) Inactive licenses prohibit those engineers or firemen from legally operating or to be in charge of any steam boiler or turbine/engine so long as the license is inactive.
- (4) Engineer, Fireman, special-to-have-charge, or special-to-operate licenses not renewed, either active or inactive, at expiration date shall become void, and shall after one year be reinstated only by re-examination of the licensee.

License Extension – Military Service. If the licensee is on active duty with the armed forces of the United States, as defined in M.G.L. c. 4 § 7 clause forty-third, the license shall remain valid until the licensee is released from active duty and for a period of not less than 90 days following that release. For this section to apply, the licensee must be given an Honorable Discharge, a General Discharge, or an Under Other than Honorable Conditions (UOTHC) Discharge, as noted on their discharge and separation papers.

Any Engineer or Firemen who also holds a Special to have Charge or Special to Operate License and completes the 30 Hour Continuing Education requirement for the renewal of their Engineer or Firemen's license may use the same hours for the renewal of the Special To have Charge or Special to Operate License they hold.

- (5) Any instructor added to a program, after a program has been approved, must be approved by the Commissioner or their designee.

(6) Monitors and instructors who are approved to conduct continuing education shall keep uniform records of attendance of licensees following the format provided by the Department, for a period of five years after the issuance of the licensees certificate of completion. They shall be responsible for the security of all uniform certificates and other Commissioner approved matter and the proper issuance thereof. Strict and accurate attendance records shall be kept and submitted to the Department, at its request, for review. The Department shall keep records of the issuance of uniform certificates and other matter as it relates to the approved programs. The falsification of attendance records and the fraudulent issuance of certificates or other Department matter by any licensees shall be grounds for initiating formal proceedings under M.G.L. c. 146, § 59 and c. 30A to show cause why their license or licenses should not be suspended or revoked.

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